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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,684	04/16/2001	Zhong-Min Wei	21829/71 (EBC-005)	8258

7590

04/18/2003

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT

PAPER NUMBER

1638

DATE MAILED: 04/18/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/835,684

Applicant(s)

WEI ET AL

Examiner

Medina A Ibrahim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 43-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1-20 and 43-46 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Applicant's response filed 1/27/03 in reply to the Office action mailed 10/24/02 has been entered. Claims 21-42 and 47-50 have been cancelled. Therefore, claims 1-20 and 43-46 are pending and are under examination. The previous indication that a preliminary amendment is entered was an error. The Office confirms that no preliminary amendment has been filed in this application.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

Claims 1-20 and 43-46 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Wei et al (US 5, 776, 889, filed July 1997, Applicants' IDS) in view of Fajardo et al (Biological Control: Theory and Applications in Pest Management; vol 13, no. 3, pp. 143-151 (U)). This rejection is repeated for the same reasons of record as set forth in the last Office action. Applicant's arguments filed 1/27/03 have been considered but are not deemed persuasive.

Applicant argues that the claimed invention is not obvious over Wei in view of Fajardo. Applicant relies upon the following points to support his position: 1) Wei's teaching is limited to topical application of hypersensitive response elicitor proteins or polypeptides to impart pathogen resistance to plants treated therewith. However, Applicant continues, nowhere does Wei suggest or provide expectation of success in applying HR protein or polypeptide to harvested fruits or vegetables to impart disease

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resistance to said fruits or vegetables. 2) Fajardo is limited to the use of non-proteinaceous inducing agents that are not elicitor proteins. 3) PTO has provided no motivation to combine the teachings by Wei and Fajardo, and no evidence that disease resistance induced in the plant treated with HR can be transferred to fruits or vegetables removed from the plant. Applicant finally argues that since Wei is silent with respect to treatment of fruits or vegetables with HR to inhibit postharvest disease, and Fajardo uses non-elicitor compounds, together with lack of motivation and expectation of success, the claimed invention is not obvious over the cited references. Applicant urges that the rejection be withdrawn.

Applicant's arguments have been fully considered but are not deemed persuasive for the following reasons: Firstly, it should be noted that since the rejection is one of obviousness and not one of anticipation, Wei need not teach all claim limitations. Secondly, Wei is relied upon because it provides methods of inhibiting pathogen resistance in tomato by external treatment of HR elicitor protein or polypeptide to the plant. Given the fact that hypersensitive response in plants induces constitutive expression of pathogen-related proteins (PR) as taught by Fajardo, one skilled in the art would have expected a broad spectrum of disease resistance including postharvest diseases in the tomato plant (mature tomato plant will include tomato fruit) taught by Wei, not to mention if HR protein is applied to harvested tomato fruits. Wei disclosed Harpin-induced resistance of tomato against bacterial wilt and spot diseases caused by *Pseudomonas* and *Xanthomonas*, against Fusarium wilt disease of tomato, and against late blight disease caused by *Phytophthora infestans*. While Wei does not explicitly

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teach treatment of tomato fruits, Applicant has provided no evidence that the disease resistance induced in the tomato plant treated with HR protein, cannot be induced in the tomato fruit if HR protein is applied to harvested fruits. In addition, the Examiner notes that claims 1-5, 10-20, and 43-45 do not require that HR protein be applied to harvested fruits or vegetables.

With respect to Fajardo, Applicant's assertion that Fajardo does not teach elicitor proteins is incorrect. On page 143, column 1, lines 25-28, Fajardo states, "(a) temporal differential induction of chitinase, β -1,3-glucanase, and peroxidase was demonstrated as a result of elicitor application". In column 2, Fajardo also states, "(i)nduction of constitutive plant enzymes or pathogen-related proteins which are capable of inhibiting pathogen development would contribute to greater resistance". The chitinase, β -1,3-glucanase, and peroxidase are pathogen-related (PR) proteins induced by hypersensitive response in the plant, as known in the art. Fajardo further states, in the sentence bridging pages 143 and 144, "(e)licitors can be used for the exploitation of defense mechanisms in plants by either directly acting as signal molecules or generating signals to activate gene(s) that code for enzymes". Therefore, it is apparent that the use of HR elicitor proteins to inhibit postharvest diseases was known in the art before Applicant's invention. Whether the HR elicitor is from bacteria or fungi or whether Fajardo uses said HR elicitor via working examples is not the issue because the outstanding rejection is one of obviousness and not one of anticipation. Wei provides the expectation of success in achieving disease resistance in tomato by external application of HR proteins to the plant; while Fajardo provides postharvest treatment of

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harvested fruits with an elicitor can induce resistance to postharvest diseases.

Therefore, absent evidence to the contrary, the Examiner maintains that the combination of Wei and Fajardo references teaches every limitation of the claimed invention, and that a prima facie case of obviousness has been established. Therefore, the rejection is maintained.

Remarks

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

No claim is allowed.

Papers related to this application may be submitted to Technology Sector 1 by facsimile transmission. Papers should be faxed to Crystal Mall 1, Art Unit 1638, using fax number (703) 308-4242. All Technology Sector 1 fax machines are available to receive transmission 24 hrs/day, 7 days/wk. Please note that the faxing of such papers must conform with the Notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Medina A. Ibrahim whose telephone number is (703) 306-5822. The Examiner can normally be reached Monday-Thursday from 8:30AM to 5:30PM and every other Friday 9:00AM to 5:00PM.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Dr. Amy Nelson, can be reached at (703) 306-3218.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0196.

4/13/03

Mai


ELIZABETH F. McELWAIN
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